



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/711,034

08/18/2004

Ping Li

2055.074

5033

23405

7590

09/12/2008

HESLIN ROTHENBERG FARLEY & MESITI PC  
5 COLUMBIA CIRCLE  
ALBANY, NY 12203

EXAMINER

KIM, WESLEY LEO

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

09/12/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/711,034	<b>Applicant(s)</b> LI ET AL.	
	<b>Examiner</b> WESLEY L. KIM	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/12/08 has been entered.

### ***Response to Amendment***

This Office Action is in response to Amendments filed 6/12/08.

- Claims 1 and 3 are currently amended.
- Claims 1-8 are pending in the current Office Action.

### ***Response to Arguments***

Applicant's arguments filed 6/12/08 have been fully considered but they are not persuasive.

Applicant argues that the AAPA cannot be modified with Nakamura since the AAPA is directed towards teachings of IDMA while the teachings of Nakamura directed towards CDMA.

The examiner respectfully disagrees. Clearly, it can be seen from the AAPA, i.e. the paper titled "A simple approach to near-optimal multi-user detection: interleave-division multiple-access", that IDMA systems were developed from CDMA systems with improvements and modifications for maintaining high performance in multi-path environments (Pg.391, Column 1, Third Paragraph of the Introduction and abstract).

Therefore it would have been obvious to modify the teachings of CDMA systems with the

Art Unit: 2617

teachings of IDMA systems, to provide a method where radio communication may be performed by using codes with unequal power allocation so that multi-users may be addressed to maintain a high level of performance even in multi-path environments. In addition, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicants Admitted Prior Art (10/711034) in view of Nakamura et al (US 5920554).

**Regarding Claims 1, 3, and 6-8,** Applicants Admitted Prior Art (AAPA) teaches (a) assigning a code to each user, where the said code can be the same or different for different users (Par.5) and of the same or different rates for different users (Par.23, a coded sequence is produced for m users and it is well known in the art that rates can be the same or different for different users) and; (b) encoding a source data sequence to create a coded source data sequence for each user using an encoder assigned to that user (Par.19); (c) interleaving each

Art Unit: 2617

coded source data sequence so as to modify an order of said coded source data sequence to produce an interleaved data sequence, wherein interleaved data sequences from different users are distinguished by using different interleaving schemes (Par.20 and 21), however Applicants Admitted Prior Art **is silent on** (d) assigning a pre-calculated power level to each user, wherein the power level is different for at least some users, and (e) transmitting an IDMA signal comprising the interleaved data sequence for each user using the assigned pre-calculated power level for that user.

Nakamura teaches that (d) assigning a pre-calculated power level to each user (Col.5;62-67), wherein Applicants Admitted Art teaches that the power level can be different for at least some users (Par.11, equal and unequal power control), and Nakamura further teaches (e) transmitting an IDMA signal comprising the interleaved data sequence for each user using the assigned pre-calculated power level for that user (Col.5;52-67). By the combination of AAPA and Nakamura it is obvious that a pre-calculated power level can be assigned to each user, wherein the power level is different for at least some users, and (e) transmitting an IDMA signal comprising the interleaved data sequence for each user using the assigned pre-calculated power level for that user.

To one of ordinary skill in the art it would have been obvious to modify Applicants Admitted Prior Art with Nakamura such that, (d) assigning a pre-calculated power level to each user, wherein the power level is different for at least some users, and (e) transmitting the interleaved data sequence for each user using the assigned pre-calculated power level for that user, to provide a method where radio communication may be performed by using codes with

Art Unit: 2617

unequal power allocation so that multi-users may be addressed to maintain a high level of performance even in multi-path environments.

**Regarding Claims 2 and 4**, Applicants Admitted Prior Art further teaches wherein at least one of the codes comprises at least one of a hybrid form of narrow sense code, a repeat code and a spreading operation (Par.9).

2. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (10/711034) and Nakamura et al (US 5920554) in further view of Sumiya et al (US 5319672).

**Regarding Claims 5 and 7**, Applicants Admitted Prior Art and Nakamura teach all the limitations as recited in claim 3, however the combination **does not expressly teach** the assigned codes are the same for at least some of the users.

Sumiya teaches that the assigned codes are the same for at least some of the users (Col.5;50-51).

To one of ordinary skill in the art, it would have been obvious to modify Applicants Admitted Prior Art and Nakamura with Sumiya such that the assigned codes are the same for at least some of the users to provide radio communications by spreading the digital information to the receiving ends.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WESLEY L. KIM whose telephone number is (571)272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

Art Unit: 2617

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/Wesley L Kim/  
Examiner, Art Unit 2617